Patent Claims

1. A gas turbine, in particular an aircraft engine, having at least one core engine (18; 33), mechanical shaft power being transmittable from a shaft (19; 34) of the core engine (18; 33), characterized by means which generate electrical power from shaft power drawn from the core engine (18; 33) and which generate electrical power from compressed air drawn from the core engine (18; 33).

2. The gas turbine as recited in Claim 1,
characterized in that the means generate the electrical power in a high load range of the core engine (18; 33) exclusively from the mechanical power drawn from the core engine.

3. The gas turbine as recited in Claim 1 or 2,
characterized in that the means generate the electrical power in a lower load range of the core engine (18; 33) from the mechanical shaft power drawn from the core engine and, additionally, from the pneumatic energy contained in the compressed air drawn from the core engine.

4. The gas turbine as recited in one or more of Claims 1 through 3,
characterized by control means (29) which, as a function of the load range of the core engine (18; 33), automatically connect or disconnect means for generating electrical power from the compressed air drawn from the core engine.

5. The gas turbine as recited in one or more of Claims 1 through 4,
characterized by a first generator (21), the first generator (21) being connected to the shaft (19) of the core engine (18) via a gear (20) and the first generator (21) generating electrical power from the mechanical shaft power drawn from the core engine.

6. The gas turbine as recited in one or more of Claims 1 through 5,
characterized by a second generator (26), the second generator (26) being connected to an air turbine (23) via a gear (25), the air turbine (23) generating mechanical power from the

compressed air drawn from the core engine and the generator (26) generating electrical power from the mechanical power generated by the air turbine.

7. The gas turbine as recited in Claim 6,
characterized in that a freewheel (28) is assigned to the gear (25) which cooperates with the air turbine (23).

8. The gas turbine as recited in one or more of Claims 1 through 7,
characterized in that both generators (21, 26) are connectable to one another via a controllable clutch (27), both generators (21, 26) being driven in an upper load range of the core engine (18) exclusively by the shaft (19) of the core engine (18).

9. The gas turbine as recited in Claim 8,
characterized in that both gears (20, 25) of both generators (21, 26) are connected to one another via the controllable clutch (27) and that the freewheel (28) decouples the air turbine (23).

10. The gas turbine as recited in Claim 8 or 9,
characterized in that both generators (21, 26) are decoupled in a lower load range of the core engine (18), the first generator (21) being driven exclusively by the shaft (19) of the core engine (18) and the second generator (26) is driven exclusively by the air turbine (23).

11. The gas turbine as recited in Claim 10,
characterized in that the controllable clutch (27) decouples both gears (20, 25) of both generators (21, 26) from one another and that the freewheel (28) couples the air turbine (23) with the appropriate gear (25) and the second generator (26).

12. The gas turbine as recited in one or more of Claims 1 through 4,
characterized by at least one generator (36), this or each generator (36) being connected to the shaft (34) of the core engine (33) via a gear (35), this or each generator (36) generating electrical power from the mechanical shaft power drawn from the core engine.

13. The gas turbine as recited in Claim 12,
characterized by an air turbine (38), the air turbine (38) being connected to the gear (35) via a freewheel (39), the generator (36) being driven in an upper load range exclusively by the shaft (34) of the core engine (33) and in a lower load range by the shaft of the core engine (33) and the air turbine (38).

14. The gas turbine as recited in Claim 13,
characterized in that the freewheel (39) decouples the air turbine (38) from the gear (35) in the upper load range of the core engine (33) and couples the air turbine with the gear (35) in the lower load range.

15. The gas turbine as recited in one or more of Claims 12 through 14,
characterized in that the compressed air drawn from the core engine (33) can be supplied to the air turbine (38); in the event that the rotational speed of the air turbine (38) is higher than the rotational speed of a shaft on which the starter device is situated, the freewheel (39) couples the air turbine to the gear (35) and the electrical power for the or each attachment or auxiliary is generated from the shaft power drawn from the core engine and from the compressed air drawn from the core engine.

16. A method for generating electrical power in a gas turbine, in particular in an aircraft engine, for supplying preferably an attachment or an auxiliary of the gas turbine, mechanical shaft power being drawn from a shaft of a core engine,
characterized in that electrical power is generated from the shaft power drawn from the core engine and, in addition, electrical power is generated from compressed air drawn from the core engine.

17. The method as recited in Claim 16,
characterized in that the electrical power is generated in a high load range of the core engine exclusively from the shaft power drawn from the core engine.

18. The method as recited in Claim 16 or 17,
characterized in that the electrical power is generated in a lower load range of the core engine from the shaft power drawn from the core engine and from the pneumatic energy contained in the compressed air drawn from the core engine.

19. The method as recited in Claim 18,
characterized in that mechanical power is first generated from the [pneumatic] energy [contained in] the compressed air drawn from the core engine and the electrical power is then generated from the mechanical power.

20. The method as recited in one or more of Claims 16 through 19,
characterized in that, as a function of the load range of the core engine, means for generating electrical power from the compressed air drawn from the core engine are automatically connected or disconnected.

21. The method as recited in Claim 20,
characterized in that connection or disconnection of the means for generating electrical power from the compressed air drawn from the core engine takes place as a function of a measured compression ratio.